



## *Christmas Luncheon*

12pm

Sunday 11th December



Birrallee Tavern

97 Melrose Drive, West Wodonga



*Invitations have been sent by email to members  
RSVP by 25th November*

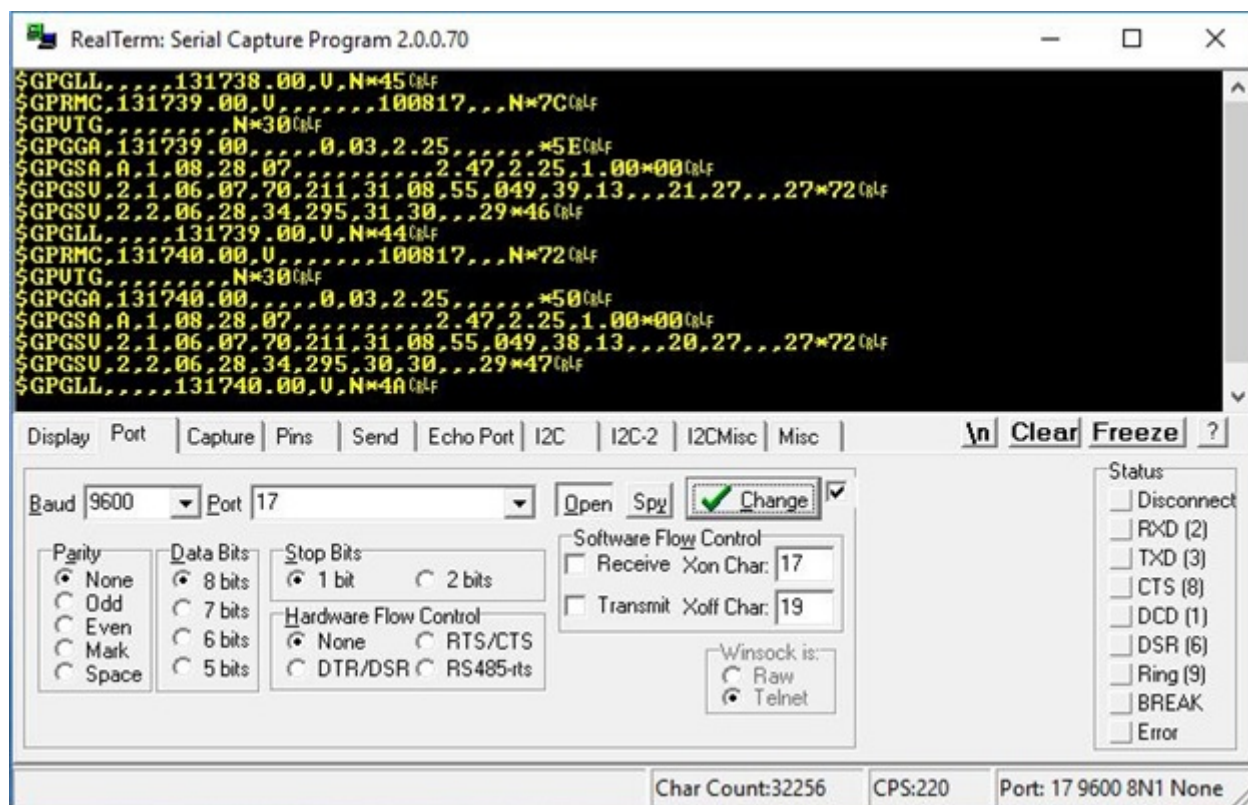
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## GPS Based Clocks

During Victoria's first great 'lockdown' I was looking for a project and found an article on using a low-cost GPS module to derive time.

As you probably know, the ‘constellation’ of GPS satellites use Cesium Beam Clocks to provide the super accuracy needed for GPS positioning and this is available to anybody with a simple GPS module and a view of the stars (not real good under a tin roof!).

The GPS module I bought off eBay, came with a mini USB socket that helped me get a feel for what it was sending out. By running a basic ascii terminal program like RealTerm (free download). You will see on the example below that it outputs a string of ‘sentences’, all of which contain specific parts of the GPS fix.



There are a heap of descriptions on the internet of how the sentences are formatted if you just search for NMEA (National Marine Electronics Association) sentence formatting. The example above is not a full ‘fix’ but enough to show the basics.

I found GitHub an invaluable resource, having lots of Arduino code to talk to GPS modules and more importantly, code to parse the raw data (strip out the bits you want). You will initially only want the \$GPRMC sentence as it is the minimum you need and contains date and time.

All date and time from the GPS is GMT or UTC and you will need to add 10 or 11 hours to Australian Eastern standard or Daylight time. Most of the American examples on GitHub only allow for time behind Greenwich so you might have to fiddle with the code to convert.

I chose a UBlox Neo-7 module because it came with an SMA connector for an external antenna rather than a 'lump' on the board. This did prove to be a problem as the UBlox modules have their own protocol to communicate with the outside world. Some of the older modules accept a command to turn off all the unwanted sentences and enable only the one you want. After a lot of research and using the RealTerm software to send commands and see what happened, I was able to establish that with UBlox I had to turn each unwanted sentence off individually.

After a good bit of fiddling and a steep learning curve I had what I wanted a clock that displayed AEST on my desk.

My thoughts then turned to Daylight Savings Time. I thought about the checks I would need to do to decide if it was the first Sunday in October or April, was it 2:00AM etc and decided it was a bit beyond me but kept looking and again GitHub came to the rescue and a guy that calls himself SlashDevlin had some code that allowed you to enter the month and first Sunday etc for changes to and from DST and his code did all the work... Well almost... In the USA DST starts in April and ends in October so that it all happens in the same calendar year. Devlin had a great idea and calculated how many seconds from January 1<sup>st</sup> to daylight savings start and finished and saving these numbers. There was only then one check required, was the number of seconds up to start or stop.

The problem with SlashDevlin's counting seconds was that in Australia, we start a new year in the middle of daylight savings. It turned out that all I had to do was flip the logic and say that it wasn't DST between April and October and it was the rest of the time.



So now I had the perfect clock that never needed resetting. If the power fails, when it comes back on, the clock waits till the GPS gets a fix and it goes back to work. BTW the S:9 is the number of Satellites it sees.

What more could you ask for, I hear you say.. Well, what about some slave clocks around the house that derive their time from the master clock.

For about \$15 I bought a set of 5, 2.4GHz modules about the size of a postage stamp that seemed to have all the protocol and handshaking built in. All you do is send it a message and it comes out the other end.

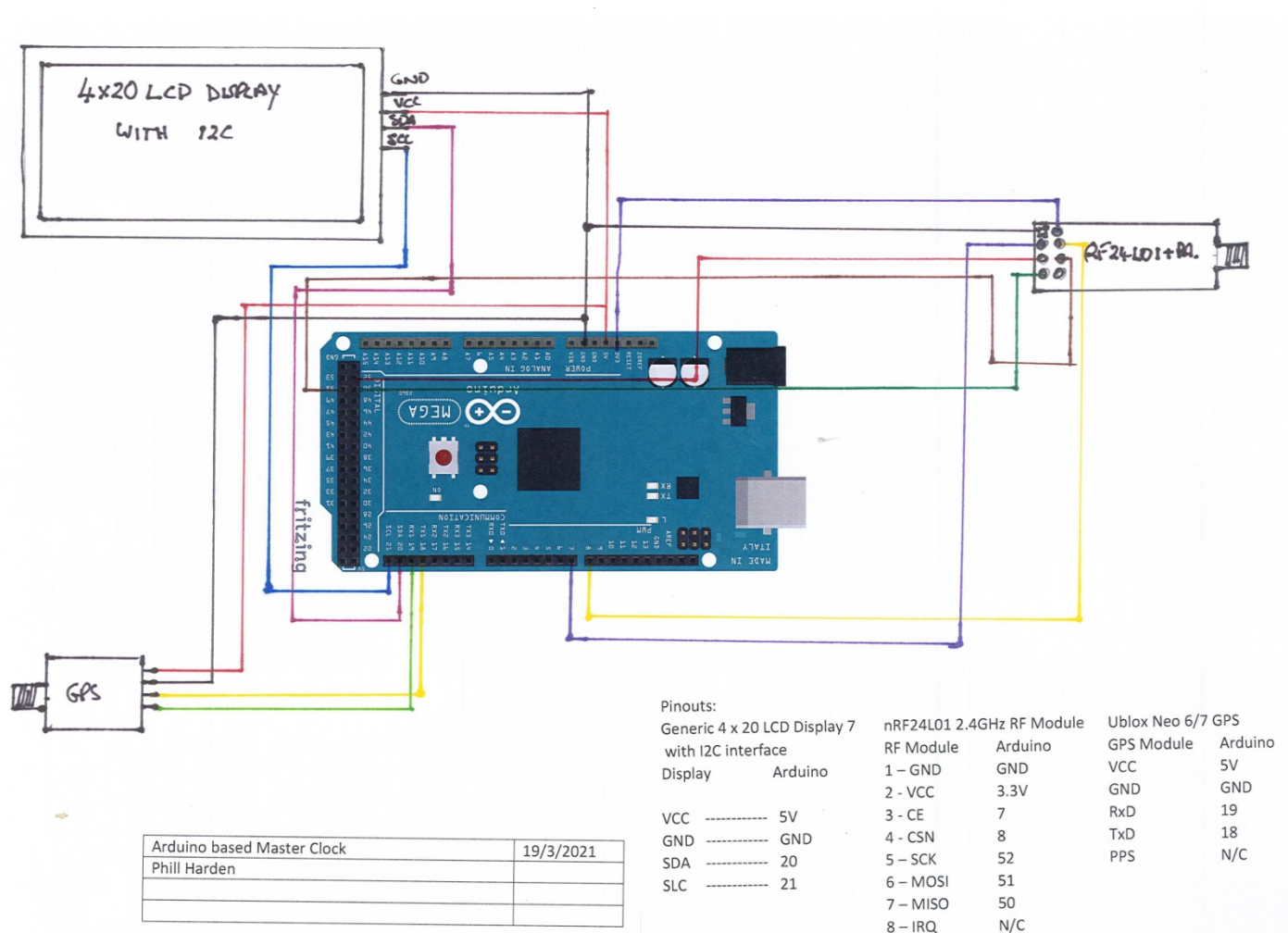




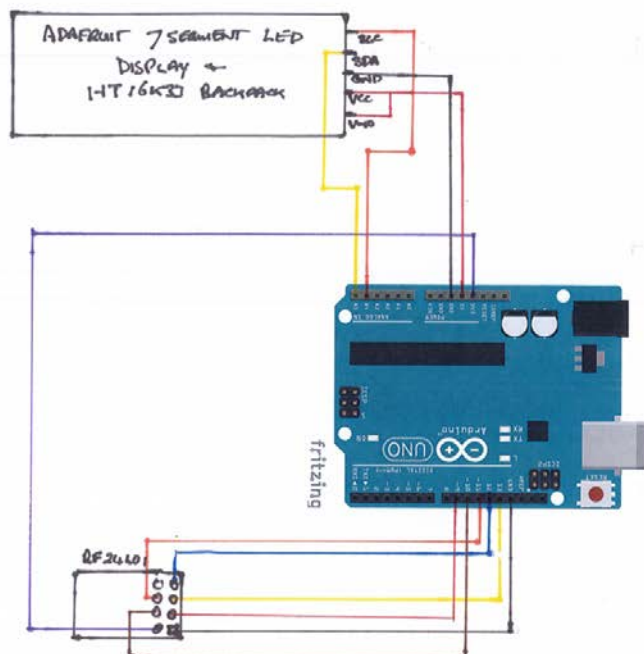
All I needed was some decent displays and something to mount them in.  
 After a lot of looking at ugly boxes from Jaycar and others, I remembered I have bought a cheap clock radio from K-Mart. I had thoughts of using the original display but it was all laid out on one PCB and would have been a lot of cutting of tracks etc to make it work so I threw out the entire PCB and mounted a large LED display in place of the original. I was able to shoehorn the Arduino and the 2.4GHz module into the box and even reuse the existing power supply and cord. So for \$13 I had ready to go boxes that actually looked like clocks and saved the cost of a lump power supply.  
 If I can only replace that clock on the stove I will be a happy man 😊

The bad news is that the big displays are getting hard to find, the clocks are probably no longer available at K-Mart, you will have to find some alternatives if you want to try this.

I am happy to share my circuits and software if you want to play.







Pinouts:

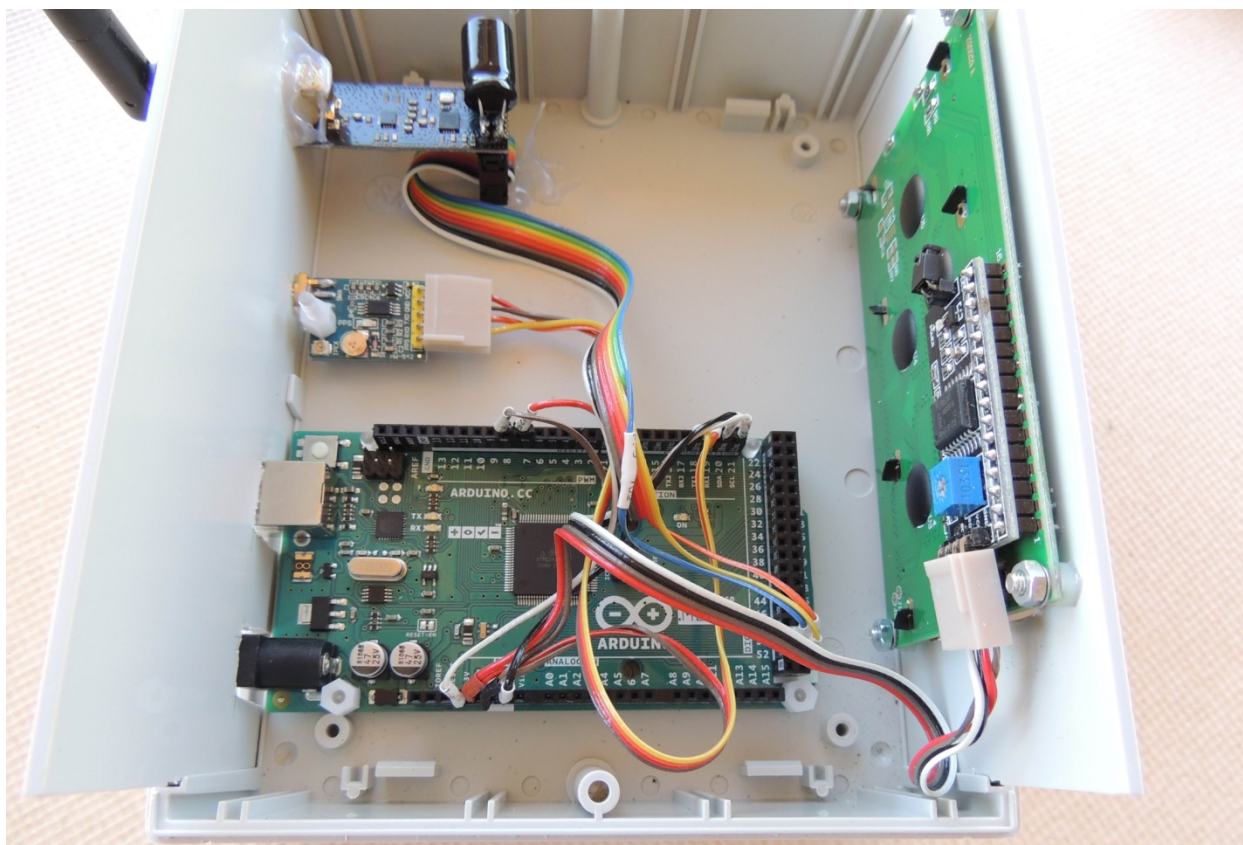
Arduino 7 Segment 1.2" LED display  
with HT16K33 I2C Backpack

Display	Arduino
V-10	5V
VCC	5V
GND	GND
SDA	A5
SCL	A4

nRF24L01 2.4GHz RF Module

RF Module	Arduino
1 - GND	GND
2 - VCC	3.3V
3 - CE	9
4 - CSN	10
5 - SCK	13
6 - MOSI	11
7 - MISO	12
8 - IRQ	N/C

Arduino GPS Slave clock	19/3/2021
Phill Harden	



The software will be emailed to NEVARC members, contact Mick at [magazine@nevarc.org.au](mailto:magazine@nevarc.org.au) if you need it.

Cheers, Phill VK3JPH

# World Inventor's Day



Hedy Lamarr 9 November, 1914 – 19 January, 2000

By the 1940's, both the Nazis and the Allied forces were using single-frequency radio-controlled technology. The problem was that torpedoes were guided toward their targets by radio, and radio frequencies could be jammed. Eventually the enemy would find the frequency used and jam the control signal by putting out a strong noise signal on the same frequency.

In 1942 at the height of her fame as an actress, Hedy Lamarr developed a new kind of communications system that couldn't be "jammed"; a system that would allow torpedoes and guided bombs to reach their targets. It was a way of encoding a message across a broad area of the wireless spectrum. If one part of the spectrum was jammed, the message would still get through on one of the other frequencies being used. The transmitter on a ship and receiver in the torpedo would synchronously hop from one frequency to another; ie, "frequency-hopping" through 88 random frequencies – the same as the number of keys on a piano. The jammer could try to jam all frequencies, but that would require too much equipment and power.

Because FHSS (Frequency Hopping Spread Spectrum) is a wireless technology that spreads its signal over rapidly hopping radio frequencies, it is highly resistant to interference and is difficult to intercept. Interference at a specific frequency only affects the transmission during that extremely short interval, making FHSS inherently cybersecure.

Hedy Lamarr and musician George Antheil were recognized for their scientific contributions; in 1997 they were awarded the Electronic Frontier Foundation Pioneer Award as well as the BULBIE Gnass Spirit of Achievement Bronze Award. The BULBIE is considered the Oscar of the inventing world, and Lamarr is the first woman to have won it.

Every November 9, World Inventor's Day is celebrated in honour of Hedy Lamarr coinciding with the date of her birth. Google doodle celebrated her 101 birthday on 9 Nov 2015.

<https://www.google.com/doodles/hedy-lamarrs-101st-birthday>

## Thank This World War II-Era Film Star for Your Wi-Fi

Throughout her life, the Austrian-born Hedy Lamarr, known in the 1930s and 1940s for her smoldering performances on the silver screen, had complicated feelings about her gorgeous face. Her unparalleled beauty had made her the inspiration for two immortal cartoon beauties—Snow White and Catwoman—and in the 1940s, plastic surgery patients requested her profile more than any other. She would often claim that outward appearances were unimportant to her, but later in life, she became a repeated plastic surgery patient herself. She couldn't bear to see her beauty fade.

However, there was much more to Hedy Lamarr than her stunning dark locks, translucent fair skin and sparkling green eyes. She was an ingenious inventor who planted a seed that would blossom into some of today's most ubiquitous technology, including Wi-Fi, Bluetooth, GPS, cordless phones and cell phones. Her inventions were a part of a complicated life filled with contradictions and elusive truths that were not part of her film star persona.



Lamarr's interest in invention had begun at age 5, when she dismantled a music box and reassembled it, and she never relinquished her curiosity.

As an inventor, she worked with a partner—an eccentric composer named George Antheil. The pair worked mostly behind closed doors, and because Lamarr's ghost-written autobiography doesn't mention her inventions, further insights into her approach to the work are sadly missing. But inventor Carmelo "Nino" Amarena recalled speaking with Lamarr in 1997. "We talked like two engineers on a hot project," Amarena said. "I never felt I was talking to a movie star, but to a fellow inventor."

Lamarr made her great breakthrough in the early years of World War II when trying to invent a device to block enemy ships from jamming torpedo guidance signals.

No one knows what prompted the idea, but Antheil confirmed that it was Lamarr's design, from which he created a practical model. They found a way for the radio guidance transmitter and the torpedo's receiver to jump simultaneously from frequency to frequency, making it impossible for the enemy to locate and block a message before it had moved to another frequency. This approach became known as "frequency hopping."



However, when Lamarr and Antheil offered their creation to the U.S. Navy, engineers rejected it, saying it was too cumbersome. During the mid-1950s, with the availability of lightweight transistors, the Navy shared Lamarr's concept with a contractor assigned to create a sonobuoy, which could be dropped into the water from an airplane to detect submarines. That contractor and others over the years used Lamarr's design as a springboard to bigger ideas. Although the patent belonging to Lamarr and Antheil did not expire until 1959, they never received compensation for use of their concept. In 1962's Cuban Missile Crisis, all U.S. ships on a blockade line around Cuba were armed with torpedoes guided by a "frequency-hopping" system.



Lamarr, who was born into an assimilated Jewish family in Vienna, later would deny her ancestry—even to her own children. Antheil's memoir, *Bad Boy of Music*, reports that she initiated their effort to invent weapons for the Allies because "she did not feel comfortable sitting there in Hollywood and making lots of money when things were in such a state." She often expressed contempt for the Nazis, some of whom had dined at her table when she was married to an Austrian munitions manufacturer, Fritz Mandl. She remembered that the Germans and other potential buyers discussed secret weapons at her home, but it is unclear whether she had access to these conversations. Among those who entered her home was Italian Fascist leader Benito Mussolini. She later claimed that Adolf Hitler dined in her house—an assertion that is not accepted by her biographers because both she and her husband were Jews, which was why lower-ranking Nazis visited them at home rather than meeting in a more public place.

She contended that her husband often consulted her about new weapons, and it is possible that these conversations sparked her interest in creating weaponry. Some have asserted that she stole the idea of "frequency hopping" from Mandl or his guests, but she denied it and no German weapons used the design.

Though years away from getting her U.S. citizenship, Lamarr also played a public role in bolstering the war effort by traveling to 16 cities in 10 days to sell \$25 million in war bonds. She also started an MGM letter-writing campaign that generated 2,144 letters to servicemen and appeared at the Hollywood Canteen, where she signed autographs for off-duty GI Joes.

Many Americans knew about Lamarr's six marriages, but few realized that she had the intelligence to be an inventor. Her patent on "frequency hopping" had expired before widespread implementation of the idea, but she lived long enough to see her brainstorm begin expanding into a vast industry late in the 20th century. In 1997, her work received recognition when she was honored with the Pioneer Award of the Electronic Frontier Foundation. Although she never made money from any of her inventions, "frequency hopping" alone is estimated to be worth \$30 billion. Frequency hopping is often a component of wireless communication systems that allows more users to communicate simultaneously with less signal interference. Multiple signals can employ the same frequency, and if the signal fails or is obstructed, it hops to another one.

"Since Lamarr and Antheil's groundbreaking work in frequency hopping," Joyce Bedi of the Smithsonian's Lemelson Center for the Study of Invention and Innovation points out, "many other applications of spread spectrum technology—the broader term for wireless communications using variable signals—have arisen, including Bluetooth, Wi-Fi and GPS."

Capturing both her beauty and her strong connection to World War II, the newly acquired poster at the National Portrait Gallery shows her costar, Paul Henreid, preparing to kiss her. Artist Luigi Martinati's portrait created a fresh image of the film's stars rather than simply reproducing a photograph. The image, based on a publicity photo, injected "a lot of additional passion and sultriness," says Robyn Asleson, assistant curator of prints, drawings and media arts. "In the poster, her dark hair cascades behind her, and Paul Henreid is catching some of it between his fingers as he cradles the back of her head in his hand," says Asleson, noting that while Lamarr is fully realized in rich color, the artist hasn't bothered to fully color in Henreid's neck or the back of his hair.

Hollywood films were unavailable in Italy while the Fascists and the Nazis held that nation in their grip, but *Conspiratori* did reach Italian audiences later. The film, inspired by the success of *Casablanca*, told the story of a Dutch freedom fighter and underground conspirators in Portugal. Ironically, Lamarr had been offered the leading female role in *Casablanca* and had turned it down, according to her autobiography. The *Conspirators* "is World War II propaganda about these horrible Nazis and these wonderful people fighting for freedom who sacrifice their love in order to pursue patriotism," says Asleson. "Most of the people in it are not American. They're emigrés who came to Hollywood, escaping fascism and whatever else was going on in Europe."

Lamarr began her acting career as a teenager in Austria under her own name, Hedwig Kiesler. Her first major film, 1933's *Ekstase*, created a stir internationally because it featured nudity, and in one scene, Lamarr

simulated an orgasm. It was so scandalous that her first husband Fritz Mandl tried to buy all copies of the film and destroy them. Mandl often subjected Lamarr to verbal abuse, and his intense jealousy circumscribed her life and limited her freedom. The couple divorced in 1937, and Lamarr moved to Hollywood the same year to work at MGM under her new screen name.

She made dozens of Hollywood films between 1938 and 1958. *Algiers* (1938), *Boomtown* (1940) and *Samson and Delilah* (1949) were her biggest films. In Hollywood, she often spent evenings working at home in the room where she invented things, such as an anti-aircraft shell equipped with a proximity fuse and a tablet that could be dropped in water to make a cola drink. Disdaining the celebrity lifestyle, she concluded that “any girl can be glamorous. All you have to do is stand still and look stupid.” Over time, she developed a reputation for being difficult and produced two films herself.



While making films, she developed an addiction to “pep pills” supplied by the studio and her behavior became erratic. In the late 1950s, she and her fifth husband Howard Lee were divorcing when her son was injured in an accident. Much to the divorce court judge’s dismay, she sent her movie stand-in, Sylvia Hollis, in her place to the initial hearing. After her Hollywood career withered, she lived modestly as a recluse. Twice, she was arrested for shoplifting, once in 1966 and again in 1991. In the first case, she was acquitted; in the second, she was convicted and sentenced to a year of probation.

Lamarr died in January 2000 at 85, but even as her end drew near, she was still inventing things: a fluorescent dog collar, modifications for the supersonic Concorde airliner, and a new kind of stoplight. After her death, her son, Anthony Loder, said that she would be pleased with the legacy of her “frequency hopping” concept: “She would love to be remembered as someone who contributed to the well-being of humankind.”

~Internet

# My Optus Modem Saga Story ~ Mick VK3CH



Will Optus customer service piss you off and muck you around? Answer:

## LIGHTNING KILLS MODEM

A while ago during the long stretch of cold rainy weather in Melbourne we had a thunderstorm.

This was on a Tuesday afternoon in late October, so we will call this “Day 1.”

A few houses down copped a direct lightning strike, we happened to be out at the time, but saw the fire truck outside their house, The next day there were NBN vans and an electrician van outside, so it must have required some serious repair work to their house wiring.

When we got home, we found no power to half of our house and some of the 240v mains breakers tripped.

After resetting the breakers, all good.... Except no internet (again).

Some inspection soon found the internet modem 12 volt DC plug pack all black on one side, it was fried.

So I decided to find some alternate 12 volts DC for the Optus modem, but it also was also fried.

So the lightning strike a few houses down had found a bit of its way to our place.

Later I found one of my computer monitors was also wrecked, but the graphics card was OK.. Go figure...

The NBN modem and its DC power supply were unaffected, with all four LED lights on correctly.

Most importantly, the expensive ham radio gear and expensive television transmitters were all OK.

## THE SAGA BEGINS

With no internet and no NBN dependent home phone, it was time to use the mobile and be put on hold for ages. After listening to pre-recorded privacy policies and how we are trying to look after your data breach concerns... all at mobile phone rates.

After that, we had to prove who we were with a bunch of questions.

They kept on saying we should go online and use the “My Optus” app, but no internet at home... (duh).

The Optus call centre told us to go to an Optus store with 100 points ID to get a new modem.

The internet account is in the name of the XYL.

When we got to the Optus store and spoke to a consultant, we were told to go online to order a new modem!

I decided to try and get my own new modem.

I bought a modem from MSY, but when I got home it was not compatible with the system we had as it had no Telephone VOIP, so back to MSY to return it.

Next was off to Officeworks for a compatible VOIP included modem.

Then I needed all the settings from Optus, but Optus do not provide third party modem support and all the internet technical forums I checked also said this.

They force you to buy their crappy supplied Optus branded modems!

So I phoned Optus again and after I eventually got through they said the XYL did not have enough ID and they wanted facial recognition, despite being a customer for over six years at the same address.

She needed to use the “MyOptus” app that her iPhone 6 does not support!

So back to the Optus store to provide 100 points ID (again).



The Optus store person said that she cannot get a replacement modem as she has already been issued one! We told them that lightning had destroyed it, but he insisted that another modem cannot be supplied as she has been issued a modem.

Apparently Optus modems are like your life, you only get given one of them!

The Optus store guy said she can sign up to a new more expensive plan in her name that comes with a modem. Or she can start a new plan in another person's name – too bad if you lived on your own. Me thinks someone is after a “sign them up” commission!

We left the Optus shop in frustration, putting it politely...

The XYL often tells me off for bad language in public, but she nearly ran afoul of this directive that day!

We then went to another place with working internet and got on to their chat line.

To cut a long story short, we eventually got a technician to send us a replacement modem in the post, for a cost of \$119 and retain the same existing plan.

All the Optus technicians spoke “Indian English” and very fast, which stressed the XYL out.

On Day 7 without internet, Cup Day, we got a SMS text in the morning saying that the modem was coming today and to be home with required photo ID, ready to collect the parcel.

I stayed in the kitchen just meters from the front door and I got a SMS text at 1.33pm saying “we missed you and parcel left at front door”. No one knocked, so they have just dumped it, no need for photo ID apparently.

So I could have gone to Flemington, hung out with lots of pretty, drunken girls and won a shit load of cash! Well... that's what all these gambling ads on TV, during the 6pm news, would have you believe...

## **TESTING THE NEW MODEM**

Upon plugging it all in, we still had no internet. After checking the configuration, the user login was missing. However Optus said the supplied modem would be pre-configured to work “out of the box”.

Lucky the XYL had these written down in her diary and with these in, then it worked.

Testing the home phone line also had that back working as well.

## **NEVARC NETWORK DRAMA**

Once all the internet problems were fixed, I later found that all my NEVARC SIP Phones could not connect to the NEVARC SIP Phone system.

Later I found I also had no NEVARC email.

Even the NEVARC website seemed off air. But using one of the “is it down?” sites, had the website as live.

After emailing Matt VK3VS it was discovered that the NEVARC system had banned me.

This was due to something here trying to logon to the system without proper authenticated credentials.

It was later found to be one of the SIP Phones, it had blank login details.

I can only assume that the lightning strike was enough to corrupt its programming, but not damage the phone.

After reprogramming the SIP Phone authenticating credentials, all worked OK, but it took a while to work out what was going on. But Matt had logs that he could check to pinpoint exactly what the problem was.

Optus should have Matt on the payroll for their head of I.T. then they could have avoided the dramas they have.

The last job was to buy a new monitor to replace the one that the lightning also killed.

*~Mick VK3CH*

# Rosebud 2022 Hamfest Report

With all the rain the concern was the road to the Hamfest being available and Hamfest area evading floods. But on the day the drive was fine with no real weather threat. But it did rain hard occasionally.

The Southern Peninsula Amateur Radio Club hosts the Rosebud RadioFest at the Eastbourne Primary School. With doors open from 9.30am and ending at 2.00pm it is a long day, compared to other Hamfests. The RadioFest was not held for the last two years due to the pandemic, so it was well attended.

Three Technical forums were hosted;  
Robert VK3XP - "QRM: How's Your Noise Floor?"  
Peter VK3YE - "Super-Simple Pedestrian Mobile QRP DXing"  
Tony VK3JED - "M17 Open Source Protocol"

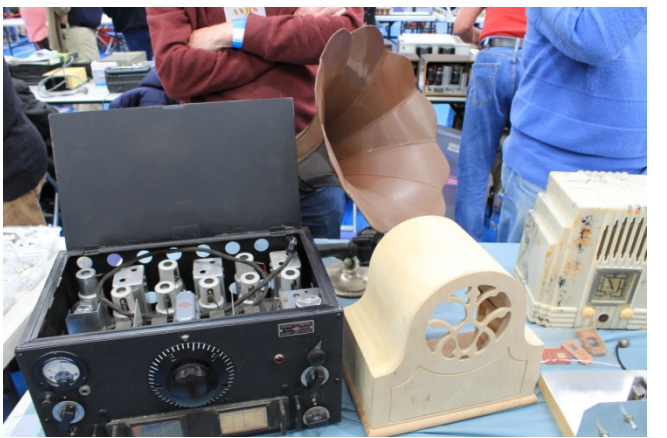
I managed to set up and pack up during non rain times which was fortunate. Once again the only way to sell was to have really cheap prices but even then sales were a struggle. But then again I am down to just the last bits of stuff after selling at so many Hamfests over the years. It might be time to retire from Hamfests with so little stuff left to sell.

I will let the photos tell the rest of the story...



Even at \$5 to \$10 for most items and a few other bits for \$20 it was hard to sell much  
The profits paid for fuel and lunch only this time





















Words said in jest are often true... sums up the whole Hamfest really...

*~Mick VK3CH*

# WARC Hamfest 2023



**The ONLY Western Suburbs Hamfest**

**Sunday 5th March 2023**

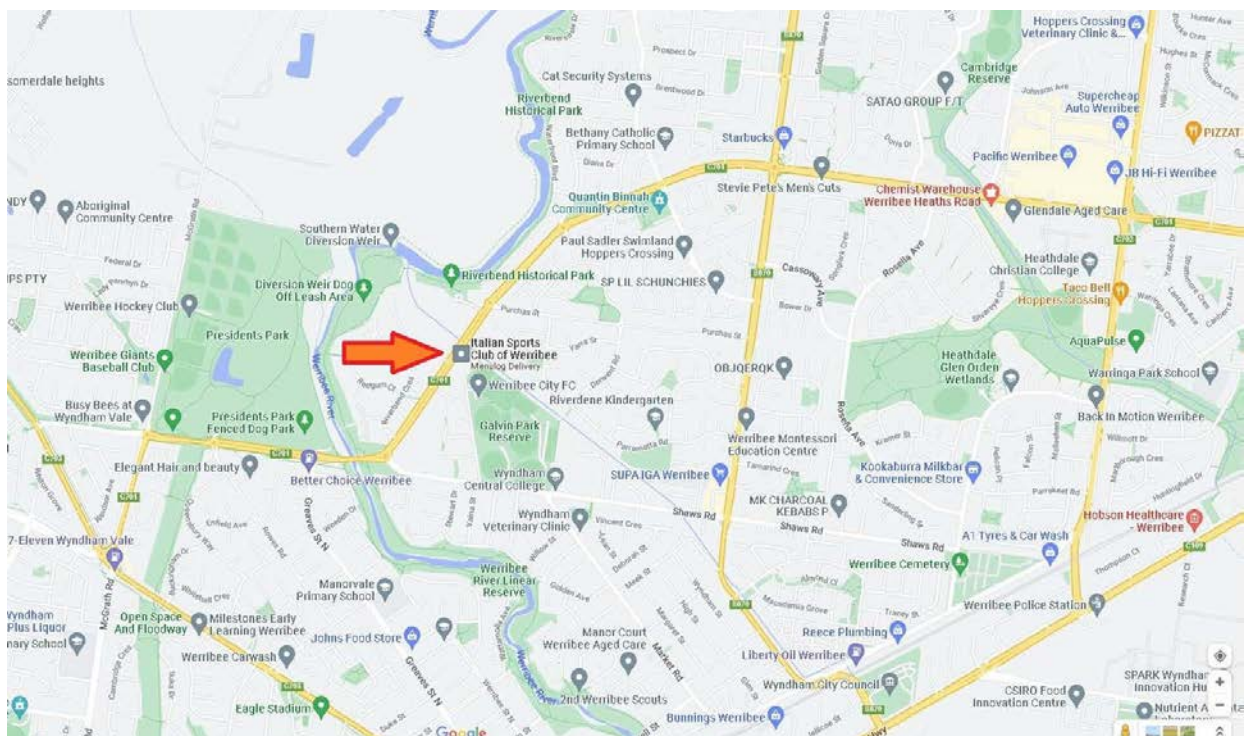
**The Italian Sports Club of Werribee**

- Same venue location as previous events
- HUGH under cover, indoor venue, HEAPS of free parking.
- Entry is still only \$7.
- Doors are open from 10am till 1pm with Tickets on sale from 9am.
- Major and Minor Door Prize draws are included free with each ticket (Extra Tickets available for purchase).
- Food available for purchase from 10am with Free Coffee and Tea.
- List of Vendors attending will be Advised.

If You Are Selling Goodies Tables are still only \$20 with one free entry included.

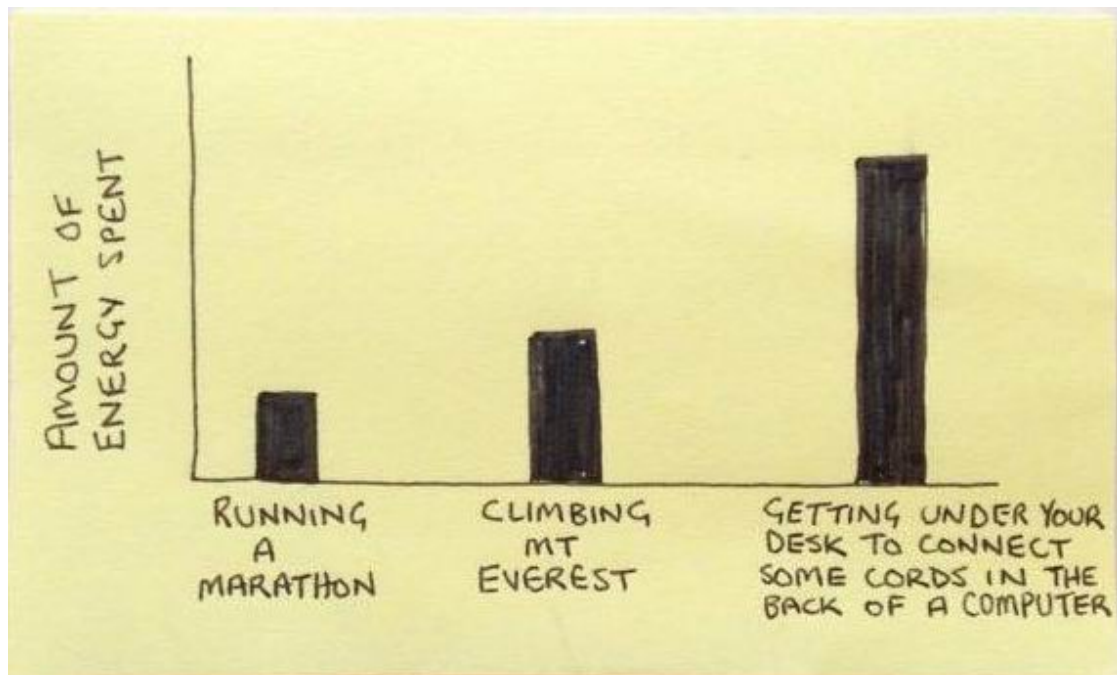
To book a table please contact me on return email or call me on 0413 463 349. If I don't answer, please leave a message as I screen for scam calls. Hope to see you there. 73's.....John Forrest VK3JNF Secretary WARC

[secretary@warc.asn.au](mailto:secretary@warc.asn.au) 0413 463 349





*Now I'm no electrical expert, but shouldn't that cable tie have been snipped off?...*





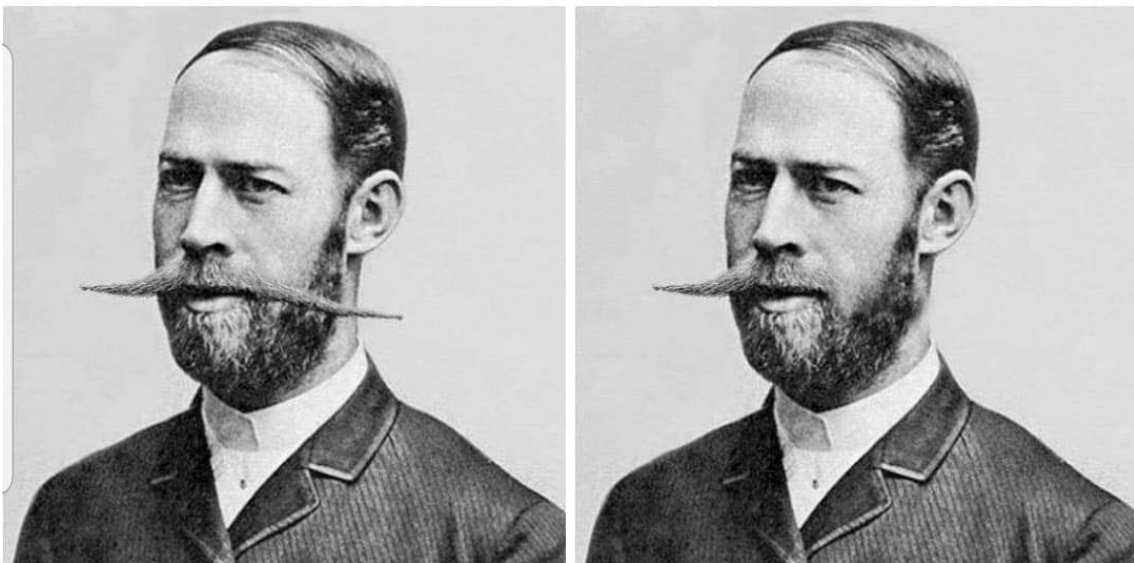


“I did my own 12v cause  
Autolecs charge too much”

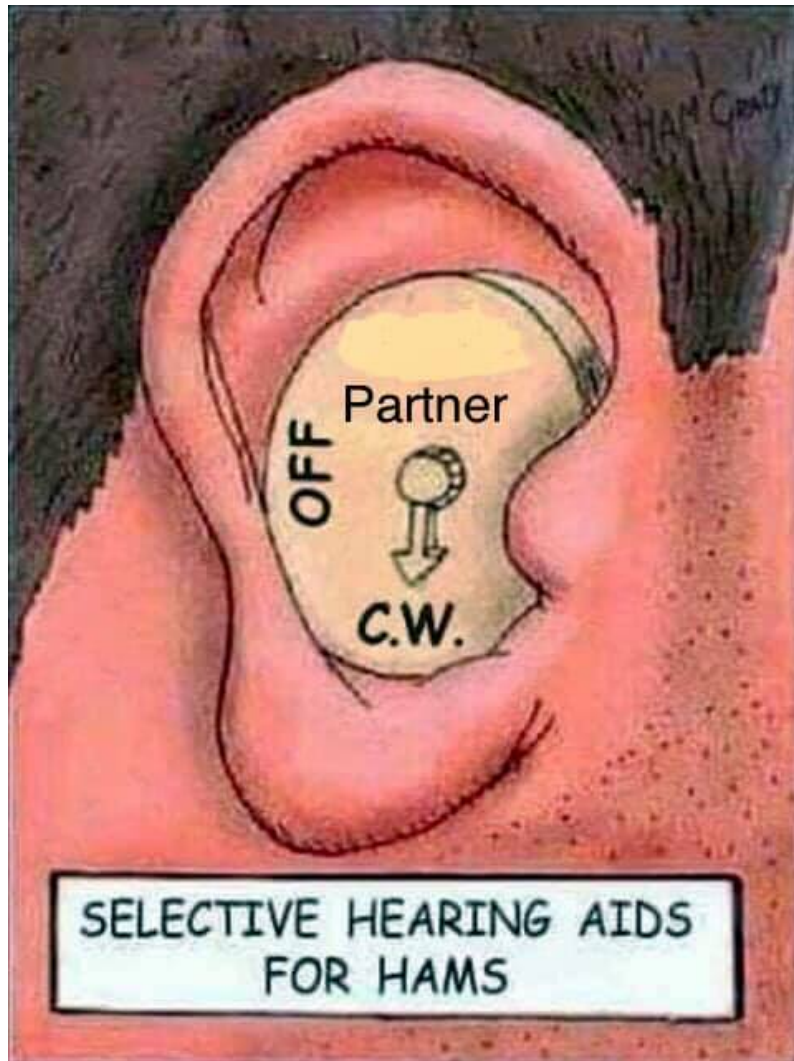


Photo 1. Heinrich Hertz inventor of the center fed dipole.

Photo 2. Heinrich Hertz after converting to the EFHW.





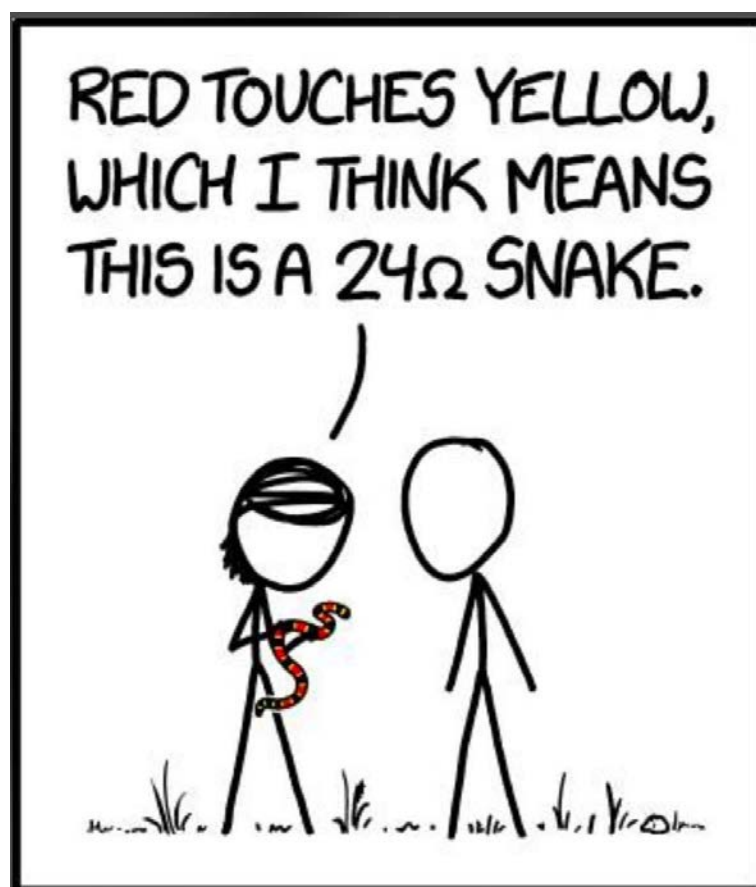


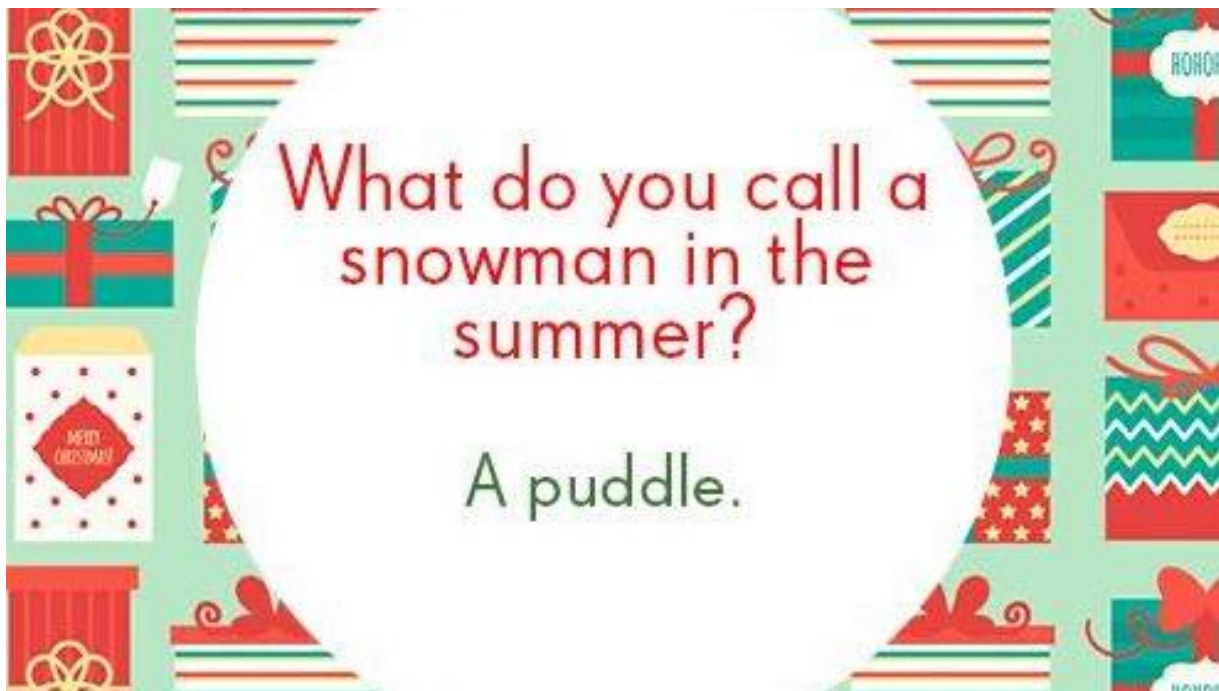
# Zoom Meeting

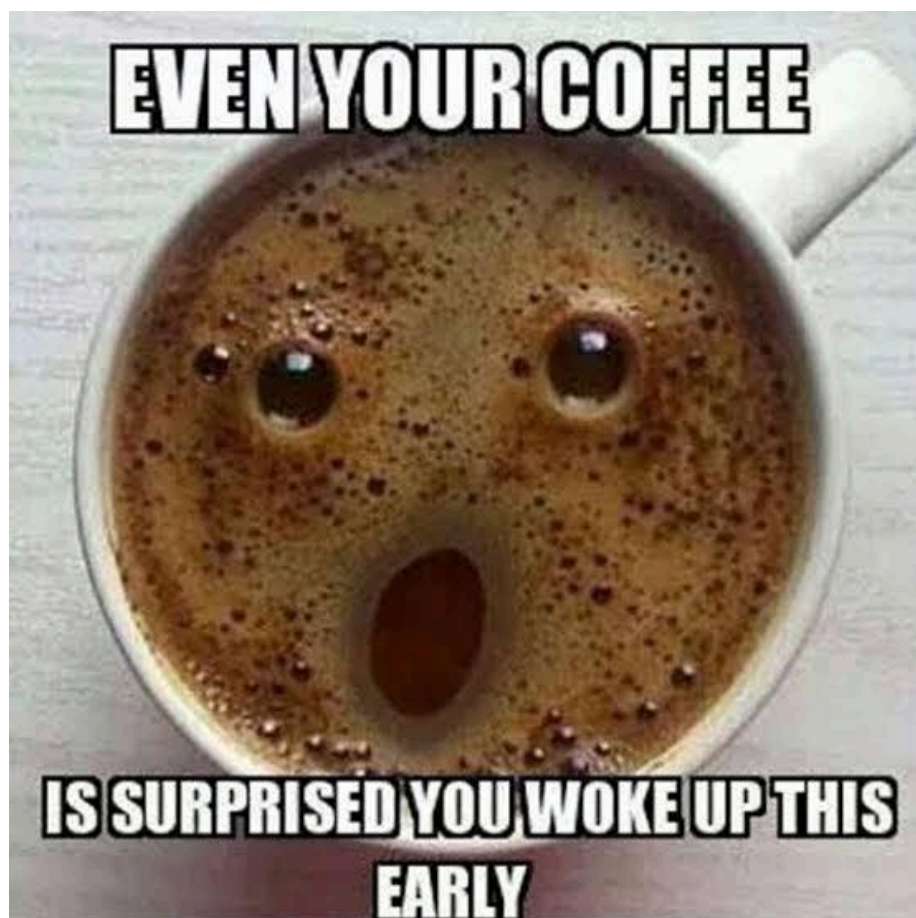
Audio only      With video

The image shows two side-by-side photographs of Yorkshire Terriers. The left photograph shows a scruffy, grey and black Yorkshire Terrier. The right photograph shows a well-groomed, tan-colored Yorkshire Terrier wearing a bright pink collared shirt.

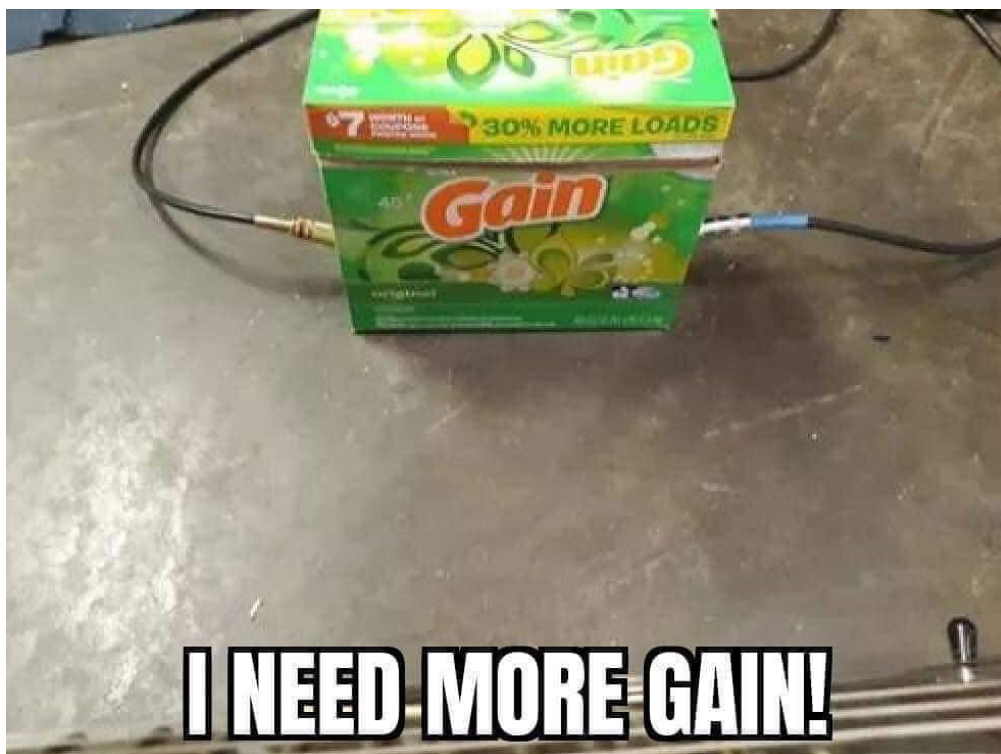
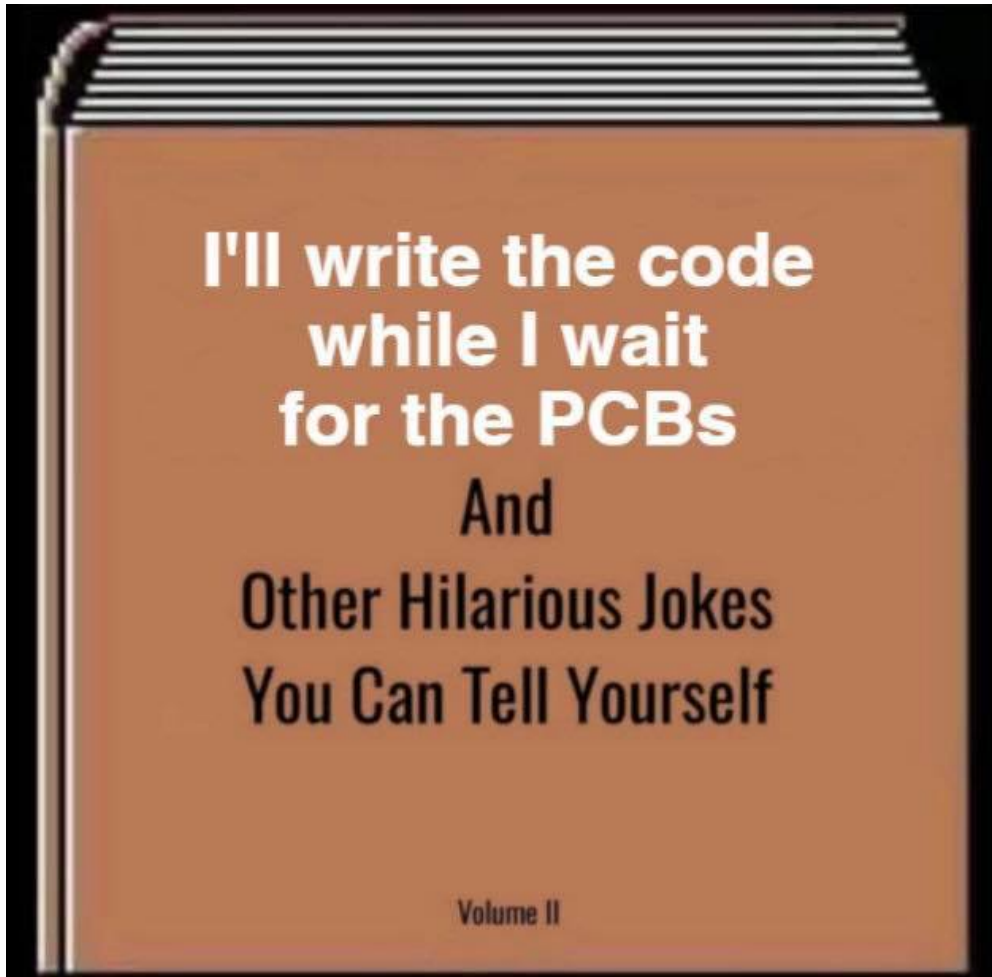


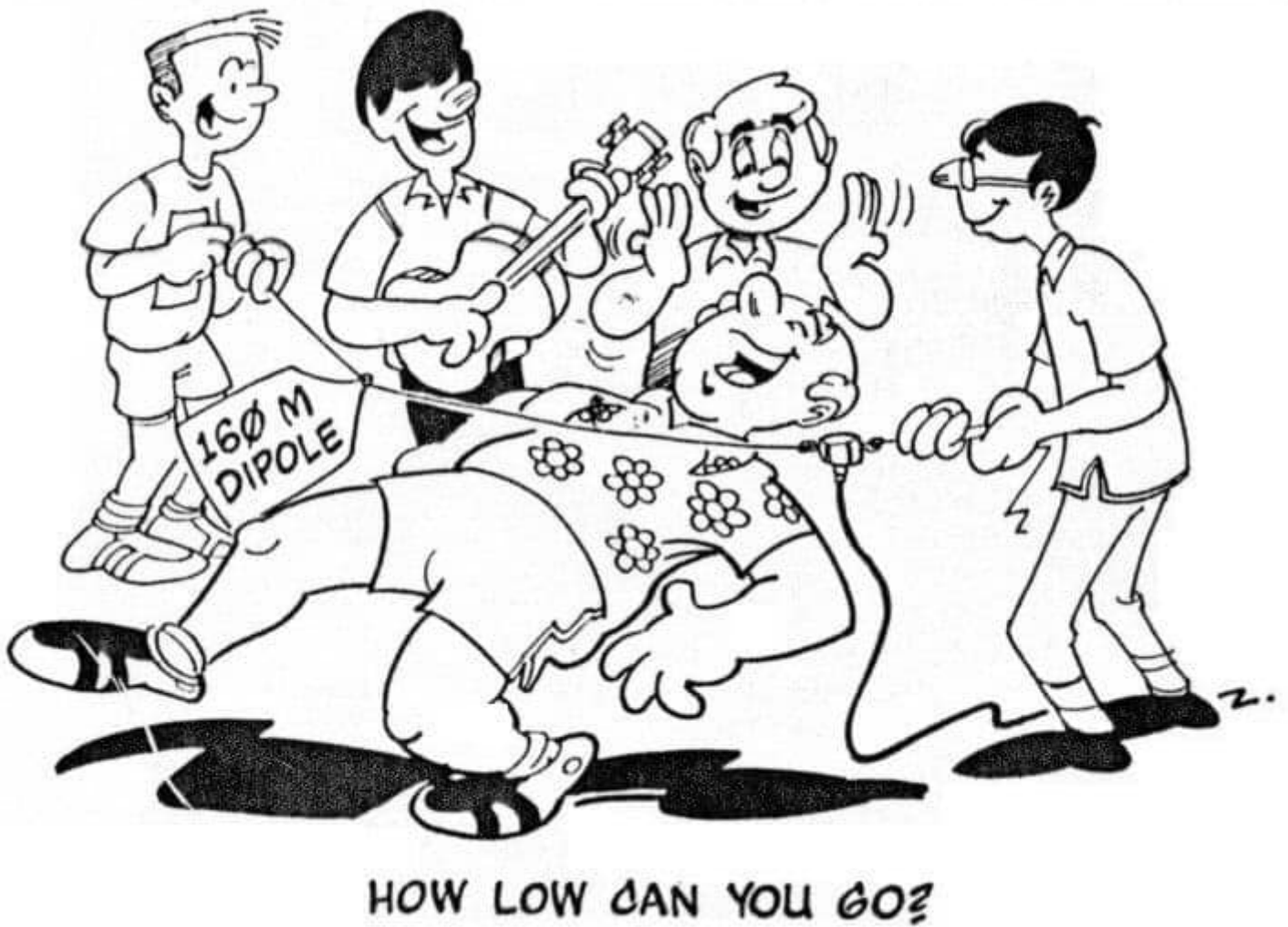
















# Antenna Design Around the World

$\frac{1}{2} \lambda$  dipole for the 40m band is approx. \_\_\_\_\_ long.

## America

40m band is 7-7.3 MHz

$$468 / 7.3 = \underline{64 \text{ feet}}$$

Either remember,  
or approx.  $300 / 40 = 7.5$

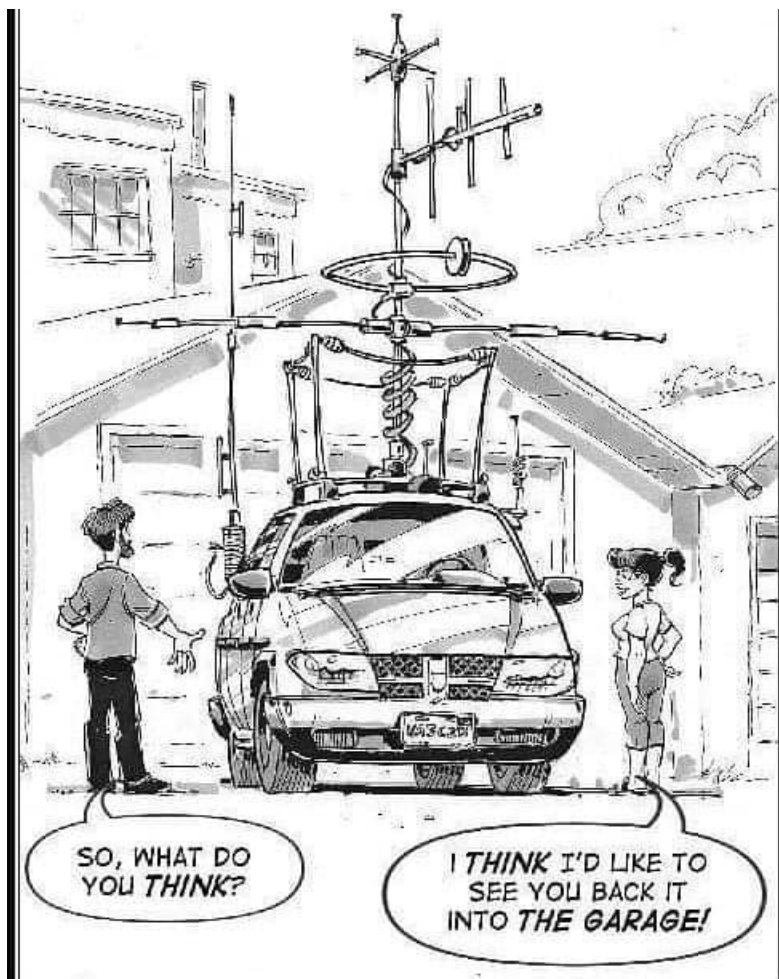
Magic constant to  
memorize!

## The rest of the world

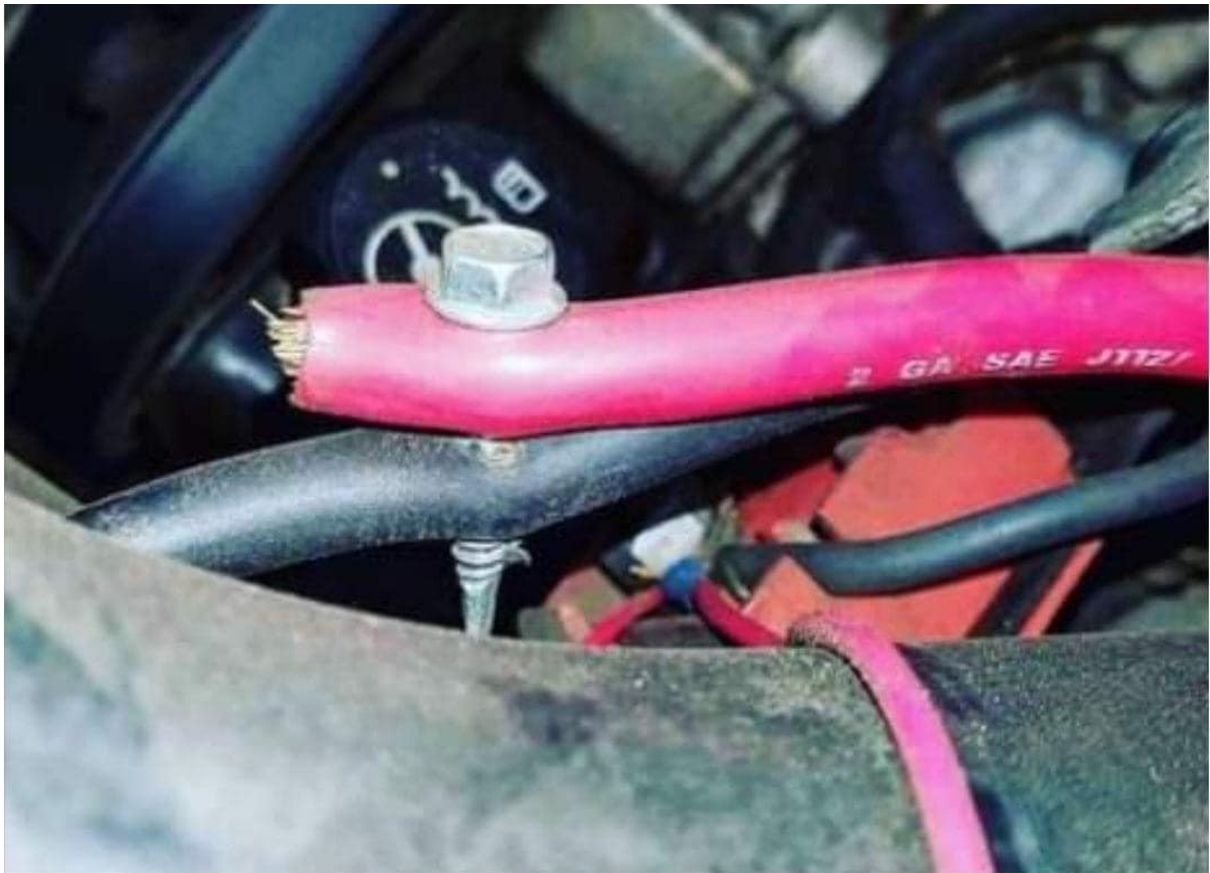
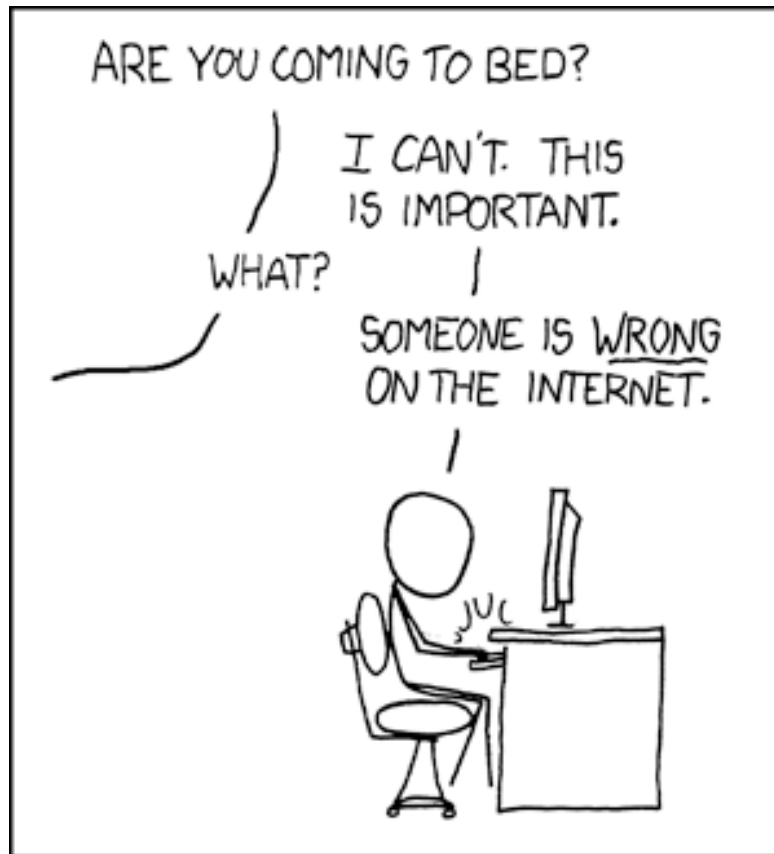
$$\lambda = 40 \text{ m}$$

$$\frac{1}{2} \lambda = \underline{20 \text{ m}}$$

simple math





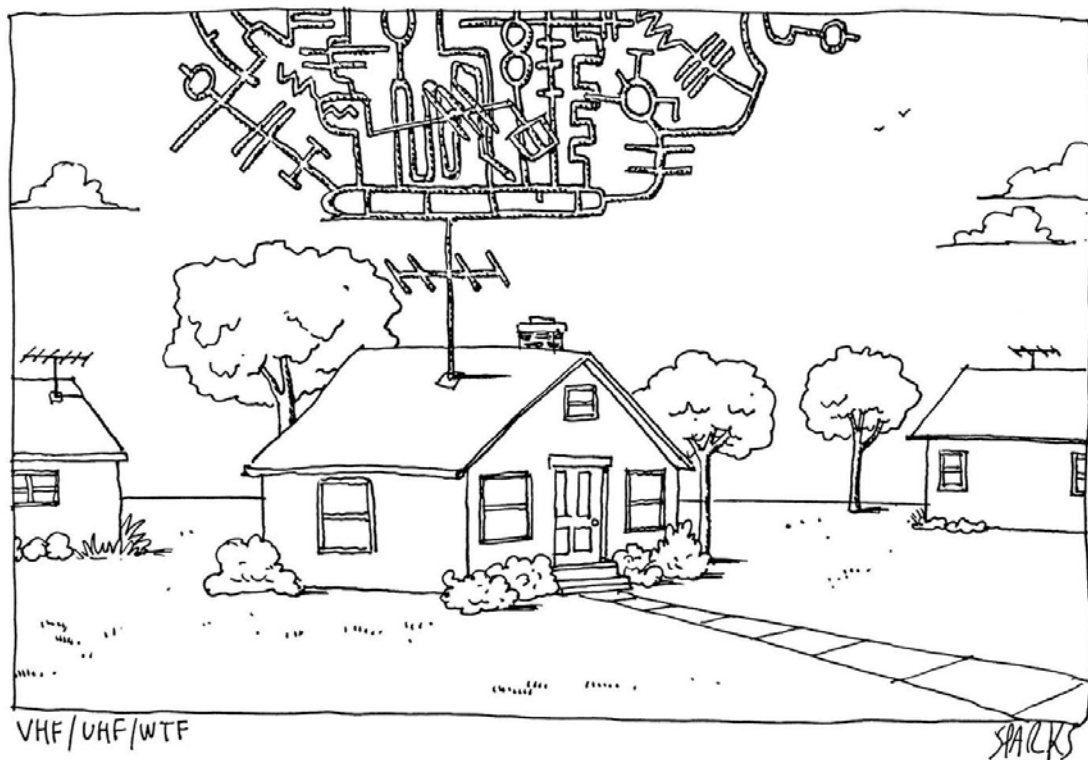
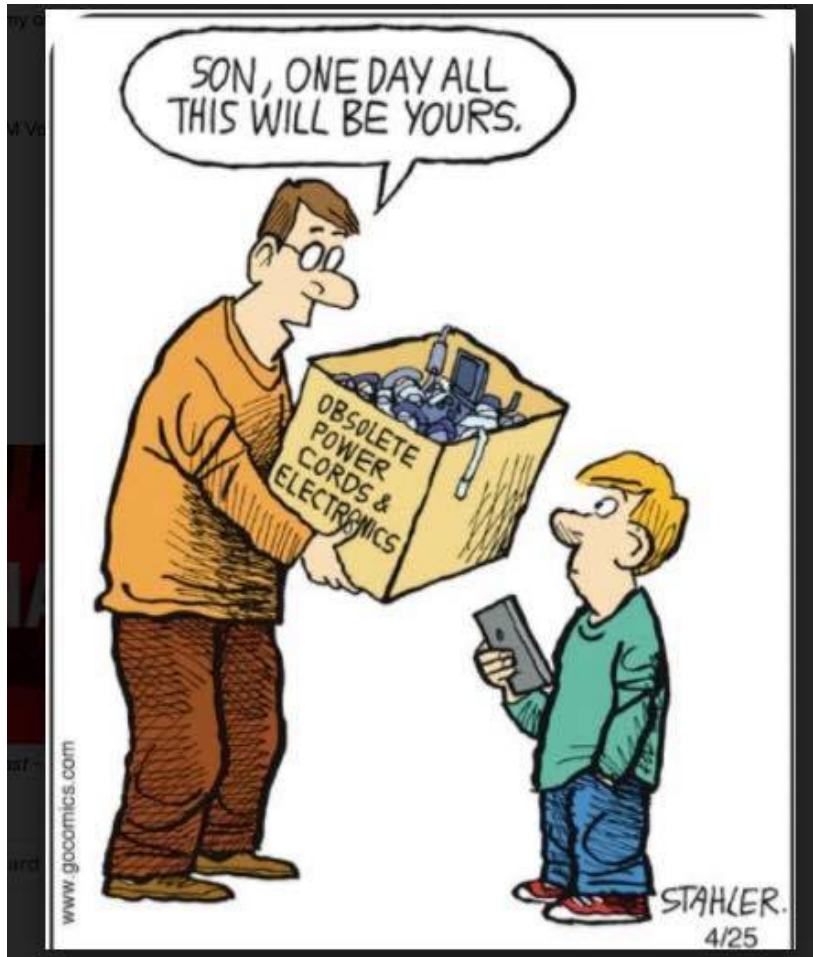




*"Nope, I can't sell it to you ... a ham operator of your caliber deserves the quality and performance of this deluxe unit."*





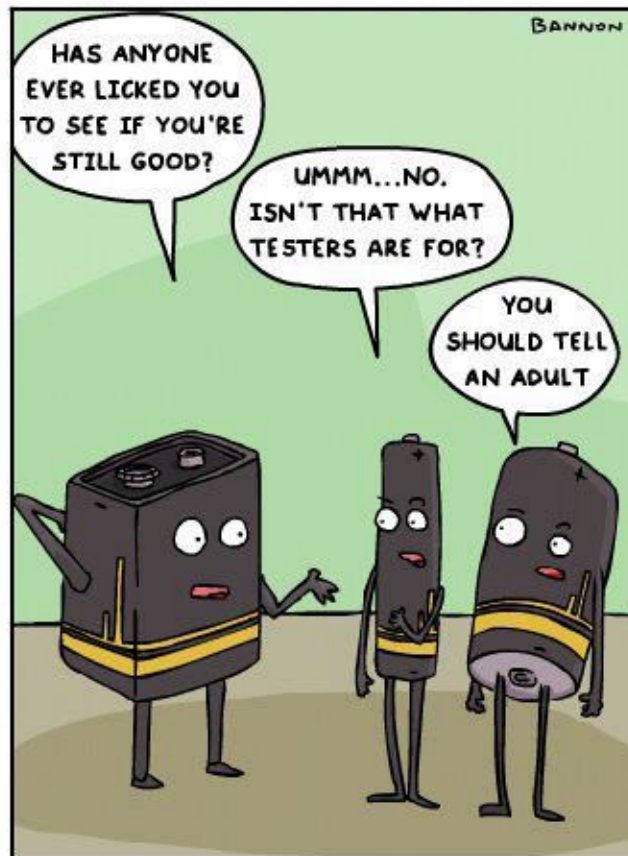


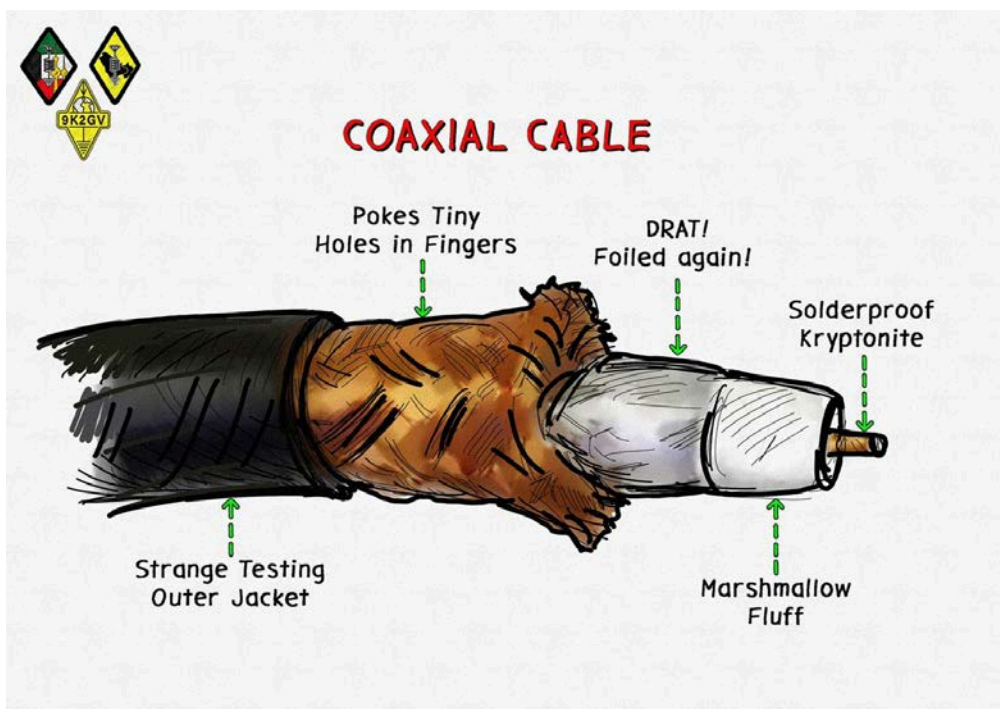






"... No, I don't think your car needs a new battery. I'd say your battery needs a new car!"







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# NEVARC NEWS

## YOUR MAGAZINE

Got a story to tell?

Working on a project that is of interest to others?

Got gear to sell, buy, swap?

Looking for that hard to get part or information?

Seen something interesting that others should know about?

NEVARC Editor is always looking for stories from members.

Send any news to Mick, VK3CH,  
at [magazine@nevarc.org.au](mailto:magazine@nevarc.org.au)

Don't think you are a good writer, or "time poor", or lazy?  
Just email photos and text to Mick and he will write it up for you.

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The typical I.T. project goes through 6 phases:

1. Enthusiasm
2. Disillusionment
3. Panic
4. Search for the guilty
5. Punishment of the innocent
6. Praise and honour to the non-participants

## *Australia Ham Radio 40 Meter Net*



7 Days a Week  
10am Local time  
(East coast)

**7.100 MHz LSB**

Approximately + or – QRM

Hosted by Ron VK3AHR

---

## NEVARC 2 Meter Net

Net Control VK3ANE

*NEVARC Linked Repeaters*

**VK2RWD, VK3RWO, VK3RWC**

**Wednesday - 8.00pm**

**Local time**



President, VK3VS, Matt  
Vice President, VK2VU, Gary  
Secretary, VK2BFC, Frank  
Treasurer, Amy Bilston



## NEVARC CLUB PROFILE

### History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.

As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.

NEVARC is an affiliated club of the Wireless Institute of Australia and The Radio Amateur Society of Australia Inc.

### Meetings

Meetings details are on the club website, the Second Sunday of every month, check for latest scheduled details.

Meetings held at the Belvoir Guides Hall, 6 Silva Drive West Wodonga.

Meetings commence with a BBQ (with a donation tin for meat) at 12pm with meeting afterwards.

Members are encouraged to turn up a little earlier for clubroom maintenance.

Call in Via VK3RWO, 146.975, 123 Hz tone.

### NEVARC NETS

#### HF

7.100 MHz 7 Days a Week - 10am Local time

#### VHF

VK2RWD Wednesday - 8.00pm Local time

NEVARC Linked Repeaters: VK2RWD, VK3RWO, VK3RWC

### Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

**Website:** [www.nevarc.org.au](http://www.nevarc.org.au)

**Postal:**

NEVARC Secretary  
PO Box 8006  
Birallee Park  
Wodonga Vic 3690

**Facebook:** [www.facebook.com/nevicARC/](https://www.facebook.com/nevicARC/)



All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio.

Contributions to NEVARC News are always welcome from members.

Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable.

You can post material to the Post Office Box address at the top of this page, or email [magazine@nevarc.org.au](mailto:magazine@nevarc.org.au)

Please include a stamped self-addressed envelope if you require your submission notes returned.

Email attachments not to exceed 5 Mb in file size. If you have more than 5 Mb, then send it split, in several emails to us.

Attachments of (or thought to be) executable code or virulently affected emails will not be opened.

Other persons or radio clubs may edit or copy out such as they like from the magazine but a reference to NEVARC News is appreciated, except copyrighted (©) material or as otherwise indicated.

Other articles credited to outside sources should ask for their permission if they are used.

While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.

This is particularly true for pre-planned outdoor activities affected by adverse weather etc.

The club website <http://nevarc.org.au> has current information on planned events and scheduled meeting dates.

You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at [www.wia.org.au](http://www.wia.org.au). The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This WIA service is FREE.